




CHAGAS DISEASE IN THE AMERICAS:
NO LONGER EXOTIC
2009

FACT SHEET

Chagas Disease: a life-threatening infection found in the Americas

Chagas disease, caused by the parasite *Trypanosoma cruzi*, is spread by infected insects called triatomine bugs and can be life threatening during both the early and late stages of infection. The impact of Chagas disease, once thought to be limited to Latin America (where an estimated 8-11 million people are infected), has moved to the United States, through immigration of persons from Chagas-endemic areas of Mexico, Central America, and South America. The estimated number of infected persons living in the United States is 300,000 or more, based on estimated disease rates by country of origin. The parasite has long been recognized to also occur in local bugs and mammals in the southern regions of the United States, and there have been a few reported cases of local transmission in humans.

Blood screening for Chagas disease

Chagas disease can also be spread through blood transfusion, organ transplantation, and from mother to child. National screening of the blood supply was instituted in early 2007, and more than 500 donors with *T. cruzi* infection were identified within the first 18 months of testing. However, awareness of Chagas disease among health professionals and the general public remains limited.

Consequences of Chagas disease

Those with the acute form of the disease, which lasts 4-8 weeks, are typically either asymptomatic or experience mild illness. Chagas disease then progresses to the indeterminate phase, which can last for years to decades. Infected persons usually don't have overt symptoms nor know they are infected. Twenty to forty percent of these persons eventually develop symptomatic disease, which can cause death. Manifestations can be cardiac (such as heart failure) and/or gastrointestinal (such as dilated esophagus or colon), in addition to an increased risk of stroke.

Field work in Latin America

Historically, transmission has been concentrated in rural areas of Latin America where poor housing conditions promoted contact with infected bugs. However, in the last several decades, successful control programs targeting vector bugs have substantially decreased transmission rates in rural areas, and large-scale migration has brought infected persons to cities both within and outside Latin America.

CDC's Division of Parasitic Disease (DPD) staff have worked to assist with international Chagas disease efforts. Accomplishments include new diagnostic methods and efforts to standardize testing internationally, partnerships to optimize screening strategies to detect infected children, strategies for insecticide application for vector bug control, epidemiologic investigations, and analysis of morbidity risks. This extensive experience has made DPD staff uniquely qualified to support partners working on Chagas disease worldwide.

Notable achievements

Clinical support

The DPD Chagas disease clinical staff provide extensive support to physicians and patients nationwide, including questions of diagnosis and release of treatment medication for appropriate patients. In the United States, treatment drugs are only available from CDC for use under investigational protocols for compassionate treatment. DPD has released treatment drugs for 134 patients since 1997; for 82 of these, the drug was released between January 2007 and December 2008.

Collaborations

The Division of Parasitic Diseases has built a number of successful Chagas disease collaborations over the years, with professional organizations, academia, public health agencies and officials, and medical organizations such as the American

Association of Blood Banks, UCLA's Olive View Hospital, Medscape (largest on-line resource for physicians), American Society of Tropical Medicine and Hygiene, the U.S. Food and Drug Administration, and the WHO Global Network for Chagas disease.

Diagnostic laboratory testing

Chagas disease laboratory staff have worked both nationally and internationally to improve screening strategies and to create innovative new diagnostic methods. Current research includes development of techniques to detect T. cruzi strain differences and biomarkers indicative of disease. Laboratory scientists have also worked to develop new diagnostic procedures to detect transplant-associated and congenital infections.

Outreach and education

The Chagas disease team has worked on various health communication initiatives:

- Development of patient and provider educational material including podcasts, fact sheets, conference exhibits and expanded information available on the CDC website, in both English and Spanish.
- Focus groups, designed to assess Chagas disease awareness and understanding, among healthcare providers and the public
- Pre-meeting clinical course on Chagas disease at the 2007 American Society for Tropical Medicine and Hygiene (ASTMH) annual conference
- Organization of Chagas disease symposium at the 2008 ASTMH annual conference and presentations at multiple professional conferences

Publications

The Chagas disease team has authored many publications on Chagas disease, most recently:

- *Chagas disease and the U.S. Blood Supply*, Current Opinions in Infectious Disease, 2008
- *Recommendations for evaluation and treatment of chronic Chagas disease in the U.S.: a systematic review*, JAMA, Nov 2007
- *Blood donor screening for Chagas disease – United States 2006-2007*, CDC's MMWR weekly report February 23, 2007

Surveillance

Currently, Chagas disease is reportable in only Arizona and Massachusetts. At this time, there are no plans to add Chagas disease to the list of nationally notifiable diseases. However, DPD plans to establish national surveillance to describe the prevalence of disease and support public health response to Chagas disease, by using surveillance data based on blood donor testing, which is reported on the American Association of Blood Bank (AABB) website and may be accessed at www.aabb.org/Content/Programs_and_Services/Data_Center/Chagas/

Future direction of the U.S. Chagas disease activities

The Chagas disease team would like to advance the prevention and control of Chagas disease by:

- Defining the risk for acquiring Chagas disease in the United States
  - Very limited data currently exist to determine risk of congenital, transplant, transfusion, or vector-borne infection
- Determining the cardiac and gastrointestinal burden of disease
- Establishing a surveillance system for Chagas disease in the United States
- Increasing public health testing capacity
- Increasing awareness of the disease among Hispanic immigrants and the physicians who serve them, in order to ensure early diagnosis and appropriate treatment

For more information on Chagas disease, please visit http://www.cdc.gov/chagas or call 770-488-7775.